(c) During the Seventh Five Year Plan the shortfall was 3252 million units due to problems relating to sealing of south end shield light water leak and consequent restriction in power level at RAPS-1 and due to failure of turbine blades and moderator inlet manifolds at MAPS-1 and 2. During the eighth plan period the shortfall of around 2226 in the actual generation was due to :

(i) Initial problem during the stabilisation period of Narora Atomic Power Station Units and their long shut down after the turbine generator fire incident in Units.

(ii) Long shut down of the Tarapur Atomic Power Station units during 1995-96 and 1996-97 for refuelling and core-shroud inspection.

(iii) Extended shut down of Madras Atomic Power Station Units during 1995-96 and 1996-97 for in service inspection of coolant channels.

(d) Continuous efforts are being made to improve the capacity utilisation of the existing plants by taking measures like strengthening of condition monitoring and preventive and predictive mainte nance improving outage management in tensive training for maintenance and operating staff particularly with the use of simulators, modifications carried out on the turbo-generators supplied by Bharat Heavy Electricals Limited, effective co-operation with Regional Electricity Boards to improve the frequency control for the grid, decentralisation of the decision making to enable prompt action at the operating stations and exchange of technical information and experince through International bodies.

Russia's fresh conditions regarding sale of Nucler Reactors

933. SHRI S. MUTHU MANI: Will the PRIME MINISTER be pleased to state:

(a) whether it is a fact that Russia now wants a supplementary agreement signed with three fresh conditions to the agreement signed on 20th November, 1988 regarding sale of its nuclear reactors to India such as (i) the entire project cost should be calculated in dollar terms, (ii) payment in dollars instead of Indian rupee as originally agreed, and (iii) it will fund only 85 per cent of the total project cost; and

(b) if so, whether Government have agreed to the fresh demands of the Russia?

THE MINISTER OF STATE OF THE MINISTRY OF SCIENCE AND TECHNOLOGY AND THE MINISTER OF STATE OF THE MINISTRY OF POWER (SHRI YOGINDER K. ALAGH): (a) and (b) A supplement to the Inter Governmental Agreement (IGA) of 1988 for setting up of the 2 x 1000 MWc VVER type Light Water Reactor Nuclear Power Station at Koodankulam in Tamil Nadu is being negotiated with the Russian Federation which includes the terms for financial assistance, repayments, etc.

Profit of Nuclear Power Stations

934. SHRI PREM CHAND GUPTA: Will the PRIME MINISTER be pleased to state:

(a) whether it is a fact that the Nuclear Power Stations made a profit of Rs. 250 crores in 1996-97 and this will increase to Rs. 300 crores in 1997-98; and

(b) what is the rate per unit at which this power is being sold?

'THE MINISTER OF STATE OF THE MINISTRY OF SCIENCE AND TECHNOLOGY AND THE MINISTER OF STATE OF THE MINISTRY OF POWER (SHRI YOGINDER K. ALAGH): (a) The Nuclear Power Corporation of India Limited made a net profit of Rs. 252.98 crore during the financial year 1996-97. The net profit of NPCIL during the current financial year upto October, 1997 is Rs. 120.03 crore (provisional) and as per revised estimates for 1997-98, the projected net profit is Rs. 217 crore.

(b) The price per unit of electricity supplied by different Nuclear Power Stations in the country are as under:—

Nuclear Power Station	Price per unit (Paise/KWh)
Tarapur Atomic Power Station	82.36
Madras Atomic Power Station	145.85
Narora Atomic Power Station	181.92
Kakrapar Atomic Power Station	247.84

परमाणु ऊर्जा के क्षेत्र में आत्म-निर्भरता

935. **प्रो.रामबख्श सिंह वर्माः**

श्रीमति मालती शर्माः

क्या प्रधान मंत्री यह बताने की कृपा करेंगे किः

(क) क्या सरकार परमाणु ऊर्जा के क्षेत्र में आत्म-निर्भरता प्राप्त करने के लिए प्रयास कर रही है,

(ख) यदि हां, तो तत्संबंधी ब्यौरा क्या है,

(ग) इस क्षेत्र में विकासशील देशों के बीच भारत की क्या स्थिति है और

(घ) देश में वे कौन कौन से क्षेत्र हैं जिनमें परमाणु ऊर्जा का उपयोग किया जा रहा है?

विज्ञान और प्रोद्योगिकी मंत्रालय के राज्य मंत्री और विद्युत मंत्रालय के राज्य मंत्री (श्री **योगेन्द्र कुमार भगतराम अलघ**): (क) जी, हां।

(ख) भारत विश्र के उन कुछ देशों में से एक है जिन्होंने परमाणु खनिजों के पूर्वेक्षण और खनन से लेकर ईधन तैयार करने और उसके संविरचन में आवश्यक क्लैडिंग, नाभिकीय रिएक्टरों के डिजाइन, निर्माण और प्रचालन, नाभिकीय ईधन के पुनसंसाधन और अपशिष्ट पदार्थ प्रबन्धन तक के संपूर्ण नाभिकीय ईधन चक्र में व्यापक क्षमता हासिल कर ली है। इसके अलावा इन वर्षों में भारत ने भारी पानी प्रोद्योगिकी रिएक्टर नियंत्रण प्रणालियों, विकिरण मानीटरन औऱ विकिरण सुरक्षा उसर उपस्कर तथा रिएक्टर की मरम्मत और अनुरक्षण संबंधी प्रौद्योगिकी में आत्मनिर्भरता विकसित कर ली है।

(ग)विकासशील देशों में भारत को इस क्षेत्र में एक विकसित देश माना जाता है और भारत उन कुछ ही देशों में से एक है जिन्होंने ऊपर (ख) में उल्लिखित क्षमताएं हासिल कर ली है।

(घ)**परमाणु ऊर्जा का उपयोग मुख्यतः** बिजली पैदा करने के लिए किया जाता है। परमाणु ऊर्जा से संबंधित प्रौद्योगिकीयों का इस्तेमाल कृषि, चिकित्सा, उद्योग, समुद्री जल के विलवणीकरण, आदि के लिए भी किया जाता है।

Foreign equity in Nuclear Power Projects

936. SHRI' GOVINDRAO ADIK: Will the PRIME MINISTER be pleased to state:

(a) whether Government are considering a policy decision for allowing foreign equity in nuclear power projects;

(b) if so, the details of the policy proposals under consideration of Government;

(c) what are the policy options under consideration for ensuring foreign private sector participation in nuclear power generation programme; and

(d) by when Government are likely to take a view in the matter?

THE MINISTER OF STATE OF THE MINISTRY OF SCIENCE AND TECHNOLOGY AND THE MINISTER OF STATE OF THE MINISTRY OF POWER (SHRI YOGINDER K. ALAGH) (a) to (d) The Government of India are open to specific offers for participation by private firms, Indian or Foreign, in the nuclear power sector. Such offers, when received have to be considered on the basis of technical suitability, economic attractiveness, regulatory requirements of our Country and conditions attached to the offers.

Nature and Character of Ppkhran Test

937. DR. MANMOHAN SINGH: Will the PRIME MINISTER be pleased to state:

(a) whether Government have seen a statement attributed to a former Chairman of the Atomic Energy Commission regarding the nature and character of Pokhran test in 1974; and